

REMARKS

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. **Claim Status / Explanation of Amendments**

Claims 1-14 are pending and were rejected. As to the merits, claims 1, 5, and 8-9 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,626,365 to Mori ("Mori") in view of U.S. Patent No. 6,500,537 to Araki, et al. ("Araki"). [6/11/07 Office Action, p. 3]. Claims 2 and 10 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mori in view of Araki and further in view of U.S. Patent Publication No. 2003/0072969 A1 to Yamazaki, et al. ("Yamazaki"). [6/11/07 Office Action, p. 4]. Claims 3, 4, and 11-12 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mori in view of Araki and further in view of U.S. Patent Publication No. 2002/0039640 A1 to Koyama, et al. ("Koyama"). [6/11/07 Office Action, p. 5]. Claims 6-7 and 13-14 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mori in view of Araki and further in view of U.S. Patent No. 6,524,661 B2 to Bagala, et al. ("Bagala"). [6/11/07 Office Action, p. 6].

By this paper, claims 1, 3-4, and 7 are amended, new claims 15-19 are added, and claims 5-6 and 8-14 are canceled without prejudice or disclaimer. Applicants reserve the right to pursue canceled claims in a continuing application. Claim 1 is amended to include the specific constituents and concentration ranges of the binder resin, solid lubricant, titanium oxide powder, and coupling agent which comprise the coating composition. More specifically, claim 1 is amended to recite, *inter alia*, a coating composition comprising a "binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from

15% ... to 100% by mass ..., titanium oxide powder in an amount of from 5% ... to 35% by mass ..., and a silane coupling agent in an amount of from 0.1% ... to 10% by mass based on 100% by mass of the binder resin." Support for the changes to claim 1 can be found throughout the application as originally filed including, for example: canceled claim 5 and p. 3, lns. 29-32 for the binder resin; canceled claim 8 and p. 4, lns. 22-24 for the solid lubricant; original claim 3 for the titanium oxide powder; as well as canceled claims 6 and 8 for the coupling agent.

Claims 3-4 and 7 are amended to clarify the contents of the coating composition by reciting, *inter alia*, concentrations "based on 100% by mass of the binder resin." Claim 3 is further amended to recite, *inter alia*, the "content of the polytetrafluoroethylene relative to the binder resin is in the range between 30% by mass and 80% by mass." Support for the changes to claim 3 can be found throughout the application as originally filed including, for example, p. 4, lns. 24-25. The compositions recited in new claims 15-19 can be found in sliding films C8-C19 and C31-C36 as listed in Tables 1-4 on pp. 9-12.

No new matter will be introduced into this application by entry of these amendments. Entry is respectfully requested.

B. Claims 1, 5, and 8-9 are Patentable over Mori in view of Araki

Applicants respectfully traverse the rejection of claims 1, 5, and 8-9 under 35 U.S.C. § 103(a) as allegedly being unpatentable for obviousness. Mori and Araki, whether alone or in combination, do not teach, disclose, or suggest each and every element of these claims.

At the outset, Applicants respectfully note that the alleged motivations for certain combinations or modifications cited by the Office Action must have been present in the prior art. Motivations that arise from the inventor's disclosure or later acknowledgement of others cannot be used in a rejection. Since the rejection does not cite anywhere in the prior art where such

motivation comes from, it must be presumed that the alleged motivation comes from somewhere other than the prior art and use of that motivation is improper and prejudicial. For this reason alone, the obviousness rejections should be withdrawn.

As set forth in detail below, Mori and Araki disclose coating compositions which are vastly different in both intended purpose and technical field. As such, there is absolutely no incentive or motivation for one of ordinary skill in the art at the time of the invention to combine the teachings of Mori and Araki and conceptualize Applicants' coating composition. Notwithstanding the problems with the recited "motivation," the obviousness rejections are overcome and traversed on the merits as follows.

Applicants' claim 1, as amended, recites:

1. A coating composition for use in sliding parts, wherein the composition comprises a binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% by mass to 100% by mass based on 100% by mass of the binder resin, titanium oxide powder in an amount of from 5% by mass to 35% by mass based on 100% by mass of the binder resin, and a silane coupling agent in an amount of from 0.1% by mass to 10% by mass based on 100% by mass of the binder resin.

Mori is directed to a composition for sliding parts. In one aspect, Mori discloses a composition comprising a metal oxide, polytetrafluoroethylene (PTFE), and a binder resin selected from at least one of: tetrafluoroethylenehexafluoropropylene copolymer resin (FEP), tetrafluoroethylene-perfluoroalkylvinyl ether copolymer resin (PFA), tetrafluoroethylene-ethylene copolymer resin (ETFE), vinylidene fluoride resin (PVDF), chlorotrifluoroethylene resin (PCTFE), or fluoroethylene propylene ether resin (EPE). [Mori, Col. 1, lns. 33-48]. The Office Action contends that Mori's binder resin, metal oxide, and PTFE respectively correspond to the binder resin, titanium oxide powder, and solid lubricant recited in Applicants' pending

claim 1. [6/11/07 Office Action, p. 3]. However, Mori fails to disclose the inclusion of a binder resin "which is polyimide or polyamide-imide" along with a "silane coupling agent" as recited in amended claim 1. The latter deficiency is also recognized and asserted by the Office Action. [6/11/07 Office Action, p. 3].

The Office Action attempts to remedy deficiencies in Mori through the introduction of Araki which is directed to a non-stick composite material for use in office automation equipment. In one aspect, Araki discloses application of a thin film composite material comprising a fluorine-containing polymer to a substrate. [Araki, Abstract and Col. 5, lns. 62-67]. Araki further discloses embodiments involving polyimide or polyamide-imide [Araki, Col. 6, lns. 14-21] and a silane coupling agent [Araki, Col. 18, lns. 9-20].

The Office Action contends it would have been obvious to modify Mori's coating composition to include the coupling agent as taught by Araki. [6/11/07 Office Action, p. 3]. However, Araki fails to specify the content of the silane coupling agent relative to the binder resin which, as recited in Applicants' amended claim 1, is "an amount of from 0.1% by mass to 10% by mass based on 100% by mass of the binder resin." Moreover, Araki fails to disclose that the fluorine-containing polymer (e.g., the composite material) contains polyimide or polyamide-imide as the binder resin. Rather, Araki merely discloses the application of the fluorine-containing polymer to a substrate fabricated from polyimide or polyamide-imide.

Thus, Mori and Araki - whether alone or in combination - fail to teach disclose, or suggest a coating composition comprising the combination of a "binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% ... to 100% by mass ..., titanium oxide powder in an amount of from 5% ... to 35% by mass ..., and a silane coupling agent in an amount of from 0.1% ... to 10% by mass based on 100% by mass of

the binder resin" as recited in Applicants' amended claim 1. Applicants submit claim 1 is patently distinct from Mori and Araki for at least this reason. Claims 5 and 8-9 have been canceled, thereby rendering the Section 103 rejection as moot. Accordingly, the obviousness rejection should be withdrawn.

C. Claims 2-4, 6-7, and 10-14 are Patentable over Mori in view of Araki and further in view of the Cited References

Applicants respectfully traverse the rejection of claims 2-4, 6-7, and 10-14 under 35 U.S.C. § 103(a) as allegedly being unpatentable for obviousness over Young in view of Arakawa and further in view of Yamazaki, Koyama, or Bagala. Since claims 6 and 9-14 have been canceled, the Section 103 rejection of these claims is rendered moot. Moreover, for at least similar reasons as stated for claim 1 above and for the tertiary references failing to overcome the deficiencies of the primary and secondary references, dependent claims 2-4 and 7 are also asserted to be in condition for allowance. Accordingly, the Section 103 obviousness rejection is respectfully traversed

Applicants respectfully note that there are further aspects which render the pending claims additionally and independently nonobvious over the cited references. For example, with respect to claim 2, the limitation wherein the "average primary particle diameter of the titanium oxide powder is 1 μm or less" is recited. Yamazaki is directed to a magnetic recording medium comprising a plurality of layers containing barium ferrite powder dispersed in a binder. [Yamazaki, Abstract]. The Office Action contends that Yamazaki discloses the incorporation of titanium oxide powder which preferably has a particle size ranging from 0.005 to 2 μm which overlaps and, hence, renders the particle size range of claim 2 as obvious. [6/11/07 Office Action, p. 4]. However, Yamazaki is not directed to a coating composition for use in sliding

parts, but rather seeks to reduce the generation of Ba-containing foreign matters on the surface of a magnetic recording medium. As such, there is absolutely no teaching or motivation to modify Mori or Araki to incorporate the titanium oxide particle size range as taught by Yamazaki. Claim 2 is therefore asserted to be patentable over Yamazaki.

Amended claim 4 recites a concentration range of 10 to 20 % by mass of titanium oxide powder relative to 100% by mass of the binder resin. The Office Action contends that Koyama discloses a content of titanium dioxide in the surface film layer with a composition of 1 to 10 wt. % which overlaps and renders obvious the claimed concentration range. [6/11/07 Office Action, p. 7]. However, Koyama is directed to a thermal transfer image-recording material having a reduced surface roughness. [Koyama, ¶0010]. Accordingly, there is no teaching or motivation to combine Koyama with Mori and Araki to obtain Applicants' coating composition which comprises 10 to 20 % by mass of titanium oxide powder. Moreover, the titanium oxide concentration range recited in amended claim 4 does not overlap that of Koyama. Therefore claim 3 is nonobvious.

Claim 7, as amended, recites a "silane coupling agent" present in a concentration "in the range between 2% by mass and 8% by mass" as recited in Applicants' amended claim 7. The Office Action contends that Bagala discloses a silane coupling agent content of about 0.1 to 10 wt. %. [6/11/07 Office Action, p. 6]. However, Bagala is directed to an improved pigment powder coating composition and method. [Bagala, Col. 2, Ins. 30-31]. Consequently Bagala provides absolutely no teaching or motivation to utilize a silane coupling agent with the prescribed concentration range in a coating composition for use in sliding parts. Accordingly, claim 7 is nonobvious over the combination of Mori, Araki, and Bagala. It is therefore

respectfully submitted that all of the pending claims are now allowable for the above reasons and early, favorable action in that regard is respectfully requested.

Applicants have chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Furthermore, Applicants have not specifically addressed the rejections of the dependent claims. Applicants respectfully submit that the independent claims from which they depend are in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicants, however, reserve the right to address such rejections of the dependent claims in the future as appropriate.

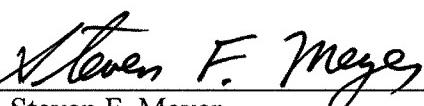
CONCLUSION

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 5000-5167.

Respectfully submitted,
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